ANESTHESIA FOR LABOR AND DELIVERY

△ GENERAL INFORMATION

Epidural, spinal, or combined spinal-epidural anesthesia may be used either to relieve labor pains or to provide the anesthetic for delivery by cesarean section.

SOME ANATOMY

The spine extends from the head down to the pelvis. In the back part of the spine, there is a tunnel (about as big as your little finger). The spinal cord goes down this tunnel. The spinal cord is the big nerve that comes down from the brain, and as it travels down toward the pelvis it gives off nerves to the left and right and then finally splits into many nerves that go into the pelvis. These nerves carry sensation (including pain) to the spinal cord and then up to the brain. They also carry sensation down the cord and in through the nerves that stimulate your muscles to move.

The spinal cord is surrounded by a sleeve (called the dura). Inside the dura is the spinal cord and some fluid (the spinal fluid).

WHAT IS EPIDURAL, SPINAL, OR COMBINED SPINAL-EPIDURAL ANESTHESIA?

All three techniques are somewhat similar.

Spinal: The medication is placed in the spinal fluid inside the dura (the sleeve).

Epidural: The medication is placed outside the dura, where the nerves come through to get to the various parts of the body.

Combined Spinal-Epidural: The medication is placed in both locations.

Walking Epidural: The medication is placed so that you can be up and walking in your room but feel very little of the labor pain.

WHAT MEDICINES ARE USED

Local Anesthetics

A number of local anesthetics are available. The anesthesiologist will choose the anesthetic and the dose of the anesthetic best suited to your special needs. Considerations on which drug or drugs to use and how much include the following:

• Whether you will have a spinal or an epidural anesthetic.
• How quickly anesthesia is needed.
• How long the anesthesia is to last.
• Whether the anesthetic is for relief of labor pain or for a cesarean section.

There is no evidence that these drugs have any short- or long-term effect on the baby, including the ability to nurse.

Narcotics

Often, very small doses of these drugs are used or combined with the local anesthetic when this is appropriate.

• To give a boost to the local anesthetic.
• During a routine vaginal delivery.
• To provide pain relief after a cesarean section.
• To provide relief after a vaginal delivery with repair of a laceration.

In the last two situations, the anesthetic may be continued after the cesarean section or to complete a vaginal delivery repair.

Again, there is no evidence that these drugs have any short- or long-term effect on the baby, including the ability to nurse.

Epinephrine

Epinephrine keeps the anesthetic in place longer so that it does not wear out too soon, and it has pain-killing effects of its own.

PREPARATION

No special preparation is necessary on your part. You will be consulted, and an explanation will be given of any anesthetic administration before it is done.

THE PROCEDURE

Spinal

You will be seated on a table with your feet over the side and your back bent forward as much as possible.

• Your lower back will be swabbed with an antiseptic solution and surrounded with sterile towels.
• A fine, short needle will be used to inject an anesthetic in the skin to make it numb.
• A special thin needle will then be used to go between the bones of your spine down through the dura surrounding the spinal cord and into the spinal fluid.
• Once inside the area where the spinal fluid is located, the anesthetic is injected, the needle removed, and a bandage applied over the needle puncture site. Note: The tip of the needle is below the spinal cord itself so there cannot be an injection into the cord.
• You will now be placed on your back on the table.

Advantages to this method:

• The anesthetic takes effect in several minutes.
• It is more reliable than an epidural anesthetic.

Disadvantages to this method:

• The single dose of anesthetic lasts up to 2 hours, so it needs to be timed correctly. If it is given too soon, it will wear off and not be available when pain is still present.

Epidural

You are prepared in the same way as for the spinal anesthetic except for the following differences:

• The needle is placed just outside the dura and just where the nerves come through it.
• A tiny plastic catheter (tube) is placed through the needle up to its tip. The needle itself is removed, but
the catheter is left there. The other end is taped to your back and shoulder.

- Medicine now can be given into the catheter as needed.

**Advantages to this technique:**

- The medicine can be dripped in as necessary for relief of pain, even after the cesarean section or vaginal delivery is over.
- Headache is rare with this technique.

**Disadvantages to this technique:**

- The anesthetic is slower to take effect; sometimes it takes 15 minutes or so.
- It is less reliable than a spinal anesthetic.

**Combined Spinal-Epidural**

It uses both techniques described. It is useful in the following situations:

- When quick anesthesia is needed.
- When it is desirable to be able to walk around during labor yet not have pain.
- When you must have a cesarean section.
- When you need pain relief after the delivery or a cesarean section.

**EFFECTS OF SPINAL OR EPIDURAL ANESTHESIA ON LABOR**

- There are no unfavorable side effects on the fetus, mother, or newborn.
- These anesthetic drugs may increase uterine blood flow (and thus oxygen to the fetus) during labor.
- The labor may be longer.
- When done properly when you are in active labor, epidural anesthesia does not increase the chance that you will need a cesarean section.
- When administered properly, these drugs should not interfere with your ability to push or to focus on where to push during labor and delivery.

**POSSIBLE COMPLICATIONS**

**Backache**

Backache is common in women before and after delivery. There may be a number of reasons for this, including the following:

- During pregnancy, a hormone is secreted, called relaxin, that relaxes the ligaments of the pelvis. This is supposed to help the baby come out through the vagina.
- The above hormone also relaxes the ligaments along the spine. This is combined with the added weight on the spine by the pregnancy.
- The mother spends a lot of time bending over, lifting, and other such back-straining movements while taking care of the baby.

In summary, there appears to be no relationship between the use of spinal or epidural anesthesia for labor or delivery by cesarean section and any backache after delivery.

**Headache**

This can occur in about one out of 100 patients. In most cases it is mild, does not progress, and is easily treated with a pain reliever such as Tylenol. A cure is accomplished in more than 99% of cases.

**Nerve Damage**

This can occur in one out of 10,000 to 20,000 patients and is rarely associated with the anesthesia. The most common cause is the position of the patient and how long she stays in that position during delivery.

**Death or Paralysis**

This can occur in one out of 500,000 patients. The risk is less than that of being struck by lightning.

As you can see, spinal, epidural, or combined spinal-epidural anesthesia is a safe and rapid way to provide pain relief in obstetrics.